

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/051412 A2

(51) International Patent Classification⁷: A61K 38/09, 38/39, A61P 15/08

(21) International Application Number: PCT/GB2004/004912

(22) International Filing Date: 22 November 2004 (22.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 0327046.9 20 November 2003 (20.11.2003) GB

(71) Applicant (for all designated States except US): QUEEN MARY & WESTFIELD COLLEGE [GB/GB]; Mile End Road, London E1 4NS (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): VINSON, Gavin [GB/GB]; Queen Mary & Westfield College, Mile End Road, London E1 4NS (GB).

(74) Agent: BROOKES BATCHELLOR LLP; 102-108 Clerkenwell Road, London EC1M 5SA (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/051412 A2

(54) Title: REGULATION OF SPERM FUNCTION

(57) Abstract: An extracellular matrix protein, such as fibronectin, vitronectin or laminin, is added to a sperm sample to bring the sperm into a low motility, non-capacitated state or maintain a pre-existing non-capacitated state. Subsequently, at an appropriate time in an *in vitro* fertilization study or *in vivo* fertilization procedure, angiotensin II or a related peptide is added to the sperm sample to enhance motility and capacitate the sperm. The extracellular matrix protein prevents undesirable early natural capacitation, and artificial insemination procedures can be made more precise, as sperm can be brought to the right state of capacitation for transfer at precisely the right time. The treatment with angiotensin II can be combined with use of the peptide RGD to compete with the binding of the extracellular matrix protein and so suppress its effect.